

## SMOKE PREVENTION.

*Report of the Select Committee of the House of Commons, appointed to inquire into the means and the expediency of preventing the nuisance of smoke arising from fires or furnaces, and who were empowered to report their opinion, together with the minutes of evidence taken before them, to the House.*

This select committee having considered the matters to them referred, have agreed to the following report:—

In their endeavours to investigate the subject, your committee have deemed it expedient to call before them a variety of persons. They have received the evidence of the most eminent men in the science of chemistry, of practical engineers of high reputation, of leading master manufacturers and proprietors of steam-engines, and of the ingenious persons who had devised means and taken out patents for the prevention of smoke. The attention of the parties called to give evidence has been principally directed to the consideration of the following heads, on which their opinions were given.

1. Whether it was practicable entirely to prevent, or very much to diminish, the nuisance now so severely felt in large towns and populous districts, from the smoke of furnaces or of steam-engines.

2. Whether, if this were practicable, it would be advisable to take any steps to prevent the nuisance, as so doing might interfere with the property or interests of manufacturers, or of the proprietors of furnaces.

3. If, in the event of the two former questions being answered in the affirmative, they would recommend some legislative enactment to be framed to prohibit the nuisance of smoke.

In regard to the first of these questions, it appears from the whole of the evidence of scientific and practical men, including master manufacturers, that smoke, which is the result of imperfect combustion, may in all cases be much diminished, if not entirely prevented.

It appears to be the unanimous opinion of the witnesses conversant with the subject, that imperfect combustion arises from a deficiency of atmospheric air to mix with and act on the inflammable matter at a proper temperature, and under circumstances which must ensure its effective operation; that this admission of air properly regulated, is the great if not the only principle of preventing smoke which is generally applicable, and that all inventions for the prevention of smoke (except where the smoke has been separated mechanically by an artificial shower of water, produced in a flue constructed for the purpose), are only various applications, in different forms, of this general principle; even the flow or jet of steam which has been applied by some persons to prevent smoke in furnaces being merely a modification of this general principle, as, though steam may modify combustion, air must necessarily flow in with it, otherwise the combustion in the furnace is arrested.

The evidence before your committee further shews, that the admission of atmospheric air, under proper regulations, into the furnace, is productive of saving in fuel, by causing the particles of carbon which would otherwise rise in smoke and be wasted, to ignite, and thereby to increase the heat in the boiler.

It appears that the expense attendant on putting up whatever apparatus may be required to prevent smoke arising from furnaces is very trifling, and as some of the witnesses observed, the outlay may be repaid within the year by the diminished consumption of fuel. For additional information on this subject, your committee beg to refer to the evidence.

Several most ingenious patents and inventions for the prevention and consumption of smoke were laid before your committee, which, from the testimony of the proprietors of furnaces by whom they were adopted, appeared to answer the two-fold purpose of preventing smoke, and of lessening the quantity of fuel required.

The means of preventing smoke might also be applied to the furnaces of steam-boats, but such application would be attended with rather more expense than on land, from the occasional want of space and the setting of boilers in a steam-vessel. No doubt, however, existed in the opinions of those examined, that the pre-

vention of smoke could be accomplished in all steam-vessels.

The use of anthracite coal and of coke, as the means of preventing smoke, were not overlooked by your committee; but, being well known, need not be repeated here.

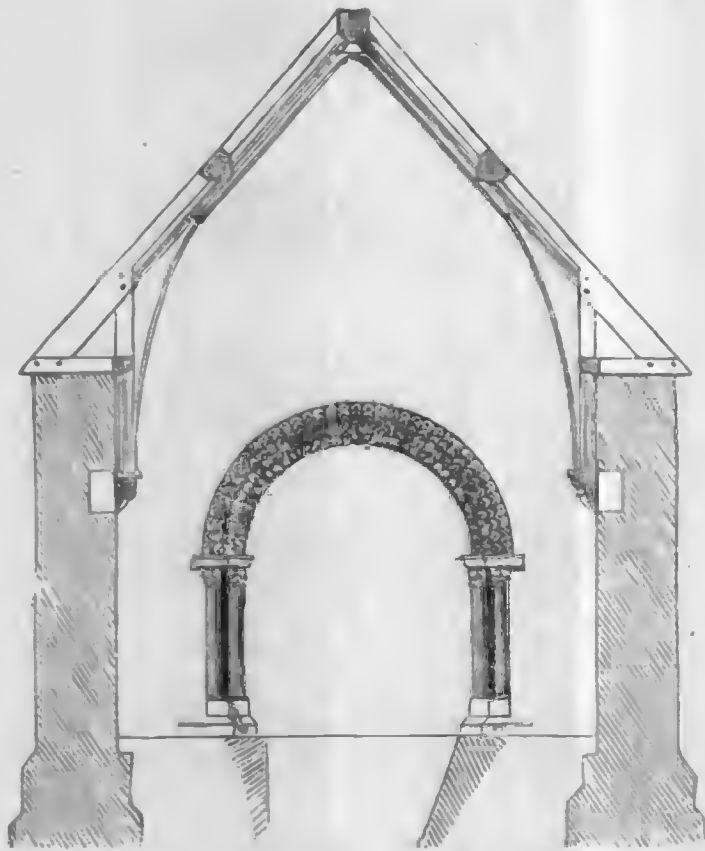
In reference to the last and most important point under the consideration of your committee, how far it will be expedient to frame some legislative enactment to lessen the nuisance from smoke, your committee, after a careful survey of the evidence before them, seeing that the evils arising from smoke are severely felt in all populous places, and are likely to increase in proportion as wealth and the use of machinery cause a greater extension of furnaces and steam-engines, come, without hesitation, to the conclusion that such a legislative enactment should be introduced without delay; and they trust that the perusal of this evidence will ensure cordial aid and co-operation, on the part of proprietors of factories, in accomplishing an object so essential to the well-being of the surrounding country and population,—an expectation which your committee feel justified in entertaining, by the knowledge of the laudable exertions which have lately been made with much success by the manufacturers and inhabitants of Leeds

and Bradford, in Yorkshire, for the prevention of smoke in those districts.

Your committee have received the most gratifying assurances of the confident hope entertained by several of the highest scientific authorities examined by them, that the same black smoke proceeding from fires in private dwellings and all other places, may eventually be entirely prevented, either by the adoption of stoves and grates formed for a perfect combustion of the common bituminous coal, or by the use of coke or of anthracite; but they are of opinion that the present state of knowledge on that subject is not such as to justify any legislative interference with these smaller fires.

In conclusion, therefore, your committee beg leave to recommend that a bill should be brought into Parliament at an early period of the next session, to prohibit the production of smoke from furnaces and steam-engines.

They indulge a hope that the matter will be thought of sufficient national importance to induce the government to bring in a bill; but in the event of their not doing so early next session, your committee recommend that the chairman of this committee should frame such a measure, as being the necessary result of the complete and strong conviction to which they have come by the prosecution of this inquiry.



SECTION OF ST. MARY'S CHAPEL, STOURBRIDGE.

Scale  $\frac{1}{2}$  of an inch to the foot.

## TO THE EDITOR.

SIR.—The above chapel formerly belonged to a priory founded in the year 1092, by Picot, a Norman lord, and his lady. At the Reformation it was granted, 39 Henry VIII., to Antony Brown, and 6 Edward VI. to Edward, Lord Clinton. I think you will agree with me that the design of the roof is very good; all the timbers are oak, and appear as sound now as when they were first framed. I think if the church architects were to follow this example instead of introducing tie beams, their roofs would look much better.

A fair called Sturbridge was formerly, and is still held in a field adjoining the chapel. It was returned upon inquest to King Edward I., that King John granted this fair for the benefit of the Hospital of Lepers, which stood there.

The Hospital for Lepers was dedicated to St. Mary Magdalen, and was before 1245 in the disposal of the burgess of Cambridge, till about that year, when we find Hugh de Northwold, Bishop of Ely, unjustly got the patronage of it.

There are no remains of the hospital, but the chapel which belonged to it is still standing, and was used as a victualling house in time of the fair.

In 1391, Robert Takell, then custos, died, and Fordham, Bishop of Ely, granted forty days' indulgence to all who assisted in the repairs of this chapel, or extended their charitable benevolence to the hospital.

Stourbridge takes its name from the little river Stere, or Stour, that runs by it.

I am, Sir, yours obediently,  
Cambridge, August 21, 1843.

W. W.